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GENERAL NOTES.

Drifts of Stars.—At the February meeting of the British Astronomical Association, an instrument was exhibited which illustrated in a beautiful and striking manner the validity of the error curve. "The apparatus was a box with a glass front, at the bottom of which were a number of receivers of equal size, while above were a large number of pins stuck in the back of the case. It was shown how, by pouring in a quantity of millet seed [through a single orifice at the top], the seeds jumped from one pin to another, but in the long run so arranged themselves as to form always the same curve"—i. e. the error curve.

The apparatus was shown by Mr. J. A. HARDCASTLE in connection with a discussion of Mr. A. S. EDDINGTON'S¹ investigation confirming KAPTEYN'S theory of two drifts of stars in the "universe." The proper motions of a large number of stars would be expected to turn out as nearly as possible "haphazard," after eliminating the Sun's motion. Mr. EDDINGTON finds that no value can be assigned to the solar motion which will make the outstanding motions of the stars consulted conform to pure chance. The curve of these "residuals," instead of having a single apex, has two. It is as if the box just described had two holes at the top. He has "shown that the outstanding motions can be accounted for only on the hypothesis that the universe—i. e., of course, all the stars consulted—is composed of two groups. In each of his groups the internal motions of the stars composing the group practically completely conform to the required law. So each group can be regarded as an independent whole, while the total visible universe, by the same argument, can no longer be taken as a single entity. Thus we shall have now to speak of the relative motions of the three following items,—viz., (1) the stars composing drift 1 taken as a whole; (2) the stars composing drift 2 taken as a whole; (3) the Sun."

Atmospheric Absorption.—Extensive photometric observations during the year 1906 led M. NORDMANN, of the Paris

¹ *Monthly Notices R. A. S.*, **67**, 34. 1906.

Observatory, and the late Director LÆWY to the remarkable conclusion that, though the absorption of sunlight by the Earth's atmosphere increases, with zenith distance, regularly and rapidly from the red to the violet, the absorption in the case of starlight is, on the contrary, much greater in the red and orange than in the blue and violet. Near the horizon, however, as was to be expected, dust and water vapor scatter the short waves more than the long, so that the absorption of starlight tends to the diurnal type beyond a zenith distance of about 80° .—*Journal B. A. A.*, Vol. XVIII, No. 4.

Field Illumination.—An improved method of illuminating the field in a transit instrument has recently been devised by Sir W. CHRISTIE, Astronomer Royal of England, and Mr. HAROLD CHRISTIE. It had been found that with the axis form of illumination apparatus, in which an adjustable annular reflector was employed, the apparent position of the wires was slightly changed by reversal of the telescope. By attaching the lamp, projecting lens, and reflector to the tube beyond the object-glass (or fastening the reflector to the object-glass itself), the discordance between time observations in the two positions of the telescope has been practically eliminated. In the improved form, the annular mirror is replaced by a central matt-surfaced disk, fixed at 45° , and of sufficient size to avoid certain diffraction effects. The intensity of illumination is regulated by a rheostat. This method of illumination is to be applied to several of the instruments at Greenwich.—*Monthly Notices R. A. S.*, January, 1908.

The next meeting of the Astronomical and Astrophysical Society of America will be held at Put-in-Bay Island, Lake Erie, on August 25th and succeeding days.

Mr. RICHARD HINCKLEY ALLEN, of Chatham, N. J., author of "Star Names and Their Meanings," and a life member of the Astronomical Society of the Pacific, died on January 14, 1908, at Northampton, Mass., of pneumonia following an attack of grippe.

M. BAILLAUD, director of the Toulouse Observatory, has been appointed director of the Paris Observatory, and M. BOURGET, adjunct astronomer at the Toulouse Observatory, has been appointed director of the Marseilles Observatory.

The death is announced of Lieutenant-Colonel R. J. L. ELLERY, professor of astronomy and late director of the Melbourne Observatory, at the age of eighty years.

The return of ENCKE's comet was observed by Dr. WOLF at Heidelberg, 1908, January 2. It was afterwards found on a photograph taken at the same observatory, 1907, December 25. The correction to the ephemeris published in *Astronomische Nachrichten*, No. 4222, was $+ 2^m.4$, $- 24'$.

Mr. H. M. PARKHURST, an amateur astronomer of Brooklyn, N. Y., who did a great deal of work in observing asteroids and variable stars, died January 21st, at the age of eighty-three years.

Sir DAVID GILL, late his Majesty's Astronomer at the Cape, enjoys the unusual honor of having twice received the gold medal of the Royal Astronomical Society. It was first presented to him in 1882 for his work in connection with the determination of the solar parallax, and last evening a second was awarded him in recognition of his contributions to the astronomy of the southern hemisphere.—*Daily Telegraph, London*.
